

IN THE CLAIMS:

Please amend claims 1-11 as follows:

1. (Amended) A semiconductor device [having at least one thin film transistor formed over a substrate, said thin film transistor] comprising:

a pixel electrode formed over a substrate;

a first thin film transistor electrically connected to said pixel electrode;

a driver circuit for driving said first thin film transistor, said driver circuit comprising at least one second thin film transistor formed over said substrate, each of said first and second thin film transistors comprising:

a semiconductor film formed on an insulating surface over said substrate;

a channel region formed in said semiconductor film;

source and drain regions formed in said semiconductor film with said channel region therebetween wherein said source and drain regions are doped with an impurity for giving one conductivity type thereto; and

at least one [lightly] impurity doped region of said first thin film transistor along a direction in which carriers of said first thin film transistor flow is [within a range from] not smaller than 0.4 [to 5] μm , and

wherein a length of said impurity doped region of said second thin film transistor is smaller than said length of the impurity doped region of the first thin film transistor.

2. (Amended) A semiconductor device comprising:

an active matrix circuit comprising a plurality of first thin film transistors formed over a substrate;

a driving circuit for driving said active matrix circuit, comprising [a plurality of] at least one second thin film transistor[s] formed over said substrate,

each of said [plurality of] first and second thin film transistors comprising:

a semiconductor film formed on an insulating surface;

a channel region formed in said semiconductor film;

a gate electrode adjacent to said channel region;

source and drain regions formed in said semiconductor film with said channel region therebetween wherein said source and drain regions are doped with an impurity for giving one conductivity type thereto; and

at least one [lightly doped] impurity region interposed between said channel region and one of said source and drain regions wherein a concentration of said impurity in said [lightly doped] impurity region is smaller than that in said source and drain regions,

wherein a length of said [lightly] impurity doped region of said first thin film transistors along a direction in which carriers of said thin film transistor flow is [within a range from] not smaller than 0.4 [to 5] μm , and

wherein said impurity doped region of said second thin film transistor is overlapped with the gate electrode.

3. (Amended) A semiconductor device [having at least one thin film transistor formed over a substrate, said thin film transistor] comprising:

an active matrix circuit comprising a plurality of first thin film transistors formed over a substrate;

a driving circuit for driving said active matrix circuit, comprising at least one second thin film transistor formed over said substrate, each of said first and second thin film transistors comprising:

a semiconductor film formed on an insulating surface;

a channel region formed in said semiconductor film;

source and drain regions formed in said semiconductor film with said channel region therebetween wherein said source and drain regions [comprise a metal silicide and] are doped with an impurity for giving one conductivity type thereto; and

at least one [lightly] impurity doped region interposed between said channel region and one of said source and drain regions wherein a concentration of said impurity in said [lightly] impurity doped region is smaller than that in said source and drain regions;

wherein a length of said [lightly] impurity doped region along a direction in which carriers of said thin film transistor flow is [within a range from 0.4 to 5] is not smaller than 0.4 μm ,
wherein a length of said impurity doped region of said second thin film transistor is smaller than said length of the impurity doped region of the first thin film transistor, and
wherein said impurity doped region of said second thin film transistor is overlapped with the gate electrode.

4. (Amended) A semiconductor device comprising:

an active matrix circuit comprising a plurality of first thin film transistors formed over a substrate;

a driving circuit for driving said active matrix circuit, comprising [a plurality of] at least one second thin film transistor[s] formed over said substrate,

each of said [plurality of] first and second thin film transistors comprising:

a semiconductor film formed on an insulating surface;

a channel region formed in said semiconductor film;

source and drain regions formed in said semiconductor film with said channel region therebetween wherein said source and drain regions [comprise a metal silicide and] are doped with an impurity for giving one conductivity type thereto; [and]

at least one [lightly] impurity doped region interposed between said channel region and one of said source and drain regions wherein a concentration of said impurity in said [lightly] impurity doped region is smaller than that in said source and drain regions[.];

an interlayer insulating film formed over said first and second thin film transistors;

an electrode formed on said interlayer insulating film and electrically connected to said first thin film transistor; and

a pixel electrode formed on said interlayer insulating film,

wherein a length of said [lightly] impurity doped region along a direction in which carriers of said thin film transistor flow is [within a range from 0.4 to 5] not smaller than 0.4 μm .

5. (Amended) A semiconductor device [having at least one thin film transistor formed over a substrate, said thin film transistor] comprising:

a pixel electrode formed over a substrate;

a first thin film transistor electrically connected to said pixel electrode;

a driver circuit for driving said first thin film transistor formed over said substrate, said driver circuit comprising at least one second thin film transistor, each of said first and second thin film transistors comprising:

a semiconductor film formed on an insulating surface;

a channel region formed in said semiconductor film;

source and drain regions formed in said semiconductor film with said channel region therebetween wherein said source and drain regions are doped with an impurity for giving one conductivity type thereto; and

at least one [lightly] impurity doped region interposed between said channel region therebetween wherein said source and drain regions wherein a concentration of said impurity in said [lightly] impurity doped region is smaller than that in said source and drain regions,

a gate insulating film [formed on] adjacent to said channel region; and

a gate electrode [formed on] adjacent to said gate insulating film,

an interlayer insulating film formed over said first and second thin film transistors;

a pixel electrode formed on said interlayer insulating film and electrically connected to said first thin film transistor; and

an electrode formed on said interlayer insulating film and electrically connected to said second thin film transistor,

wherein a length of said [lightly] impurity doped region of said first thin film transistor along a direction in which carriers of said first thin film transistor flow is [within a range from] not smaller than 0.4 [to 5] μm ,

wherein a length of the impurity doped region of said second thin film transistor is smaller than said length of the impurity doped region of the first thin film transistor.

6. (Amended) A semiconductor device comprising:

an active matrix circuit comprising a plurality of first thin film transistors formed over a substrate;

a driving circuit for driving said active matrix circuit, comprising [a plurality of] at least one second thin film transistor[s],

each of said [plurality of] first and second thin film transistors comprising:

a semiconductor film formed on an insulating surface;

a channel region formed in said semiconductor film with said channel region therebetween wherein said source and drain regions are doped with an impurity for giving one conductivity type thereto; and

at least one [lightly] impurity doped region interposed between said channel region and one of said source and drain regions wherein a concentration of said impurity in said [lightly] impurity doped region is smaller than that in said source and drain regions,

a gate insulating film [formed on] adjacent to said channel region; and

a gate electrode [formed on] adjacent to said gate insulating film,

an interlayer insulating film formed over said first and second thin film transistors;

a pixel electrode formed on said interlayer insulating film and electrically connected to said first thin film transistor; and

an electrode formed on said interlayer insulating film and electrically connected to said second thin film transistor;

wherein a length of said [lightly] impurity doped region in said first thin film transistor along a direction in which carriers of said first thin film transistor flow is [within a range from 0.4 to 5] not smaller than 0.4 μm , and

wherein the impurity doped region of said second thin film transistor is overlapped with said gate electrode.

11. (Amended) A semiconductor device having at least one N-channel type thin film

transistor formed over a substrate, said thin film transistor] comprising:

a pixel electrode formed over a substrate;

a first thin film transistor electrically connected to said pixel electrode;

a driver circuit for driving said first thin film transistor, said driver circuit comprising at least one second thin film transistor formed over said substrate, each of said first and second thin film transistors comprising:

a semiconductor film formed on an insulating surface over said substrate;

a channel region formed in said semiconductor film;

source and drain regions formed in said semiconductor film with said channel region therebetween wherein said source and drain regions are doped with an impurity for giving one conductivity type thereto; and

at least one [lightly] impurity doped region interposed between said channel region and one of said source and drain regions wherein a concentration of said impurity in said [lightly] impurity doped region is smaller than that in said source and drain regions;

wherein a length of said [lightly] impurity doped region of said first thin film transistor along a direction in which carriers of said thin film transistor flow is [within a range from 0.4 to 5] not smaller than 0.4 μm , and

wherein the impurity doped region of said second thin film transistor is overlapped with said gate electrode.

Please add new claims 12-17 as follows:

--12. The semiconductor device according to claim 5 wherein said impurity doped region is intentionally doped with at least one of carbon, oxygen and nitrogen.

13. The semiconductor device according to claim 12 wherein said gate electrode is covered with an anodic oxide film formed by anodizing a surface of said gate electrode.